

CLAIMS

What is claimed is:

1. A self-testing train detection system, comprising:
a train sensor operatively associated with at least one railroad track for detecting at least one railroad car, said train detector producing at least one signal; and
an implementing device operatively connected to said train sensor and responding to the information appropriately, wherein said implementing device is capable of engaging a warning device if said railroad car has been detected and whereby at least one of said train sensor and said implementing device are capable of placing said train detection system in a fail-safe state if at least one of said train sensor and said implementing device discovers an anomaly.
2. The self-testing train detection system as claimed in claim 1, wherein said implementing device is capable of setting parameters where if information from said train sensors is not within said parameters, then said implementing device may place said train detection system in a fail-safe state.
3. The self-testing train detection system as claimed in claim 1, wherein when at least one of said train sensor and implementation device discovers an anomaly then said implementation device is capable of engaging a warning device to alert motorists to use caution..
4. The self-testing train detection system as claimed in claim 1, wherein said train sensor is capable of determining the presence, direction, and speed of a moving train.

5. The self-testing train detection system as claimed in claim 1, wherein when power to said train sensor is interrupted said implementing device is capable of placing the train detection system into a fail-safe state.
6. The self-testing train detection system as claimed in claim 1, wherein said train sensor and said implementation device are suitable for independent operation and installation into existing systems.
7. The self-testing train detection system as claimed in claim 1, wherein said train sensor and said implementing device are capable of constant communication between each other.
8. The self-testing train detection system as claimed in claim 7, wherein said train sensor and said implementing device are capable of constant communication between each other via a wireless link.
9. The self-testing train detection system as claimed in claim 8, wherein said wireless link is capable of providing encrypted information suitable for providing secure information between said train sensor and said implementing device.
10. The self-testing train detection system as claimed in claim 1, wherein said sensor is located adjacent to said at least one railroad track.

11. A self-testing train detection system, comprising:
means for detecting the presence, direction, and speed of a moving train;
means for determining if information processed by said detecting means is
within prescribed parameters;
means for placing said train detection system into a fail-safe state when said
information processed by said train detection system is not within said
prescribed parameters; and
means for engaging a warning device if said moving train has been detected or
said system has been placed in a fail-safe state.
12. The self-testing train detection system of claim 11, wherein said means
for detecting the presence, direction, and speed of a moving train comprises a
single sensor.
13. The self-testing train detection system of claim 12, wherein when an
interruption in power to said sensor occurs said train detection system is
placed into a fail-safe state.
14. The self-testing train detection system of claim 11, wherein said
prescribed parameters may be adjusted and altered in order to be suitable for
different applications.
15. The self-testing train detection system of claim 11, wherein said means
for detecting the presence, direction, and speed of a moving train and said
means for determining if information processed by said detecting means is
within prescribed parameters are in constant communication with each other.

16. A self-testing train detection system, comprising
a train sensor operatively associated with at least one railroad track capable of
detecting the presence of at least one railroad car, comprising at least
two solid state magneto-resistive chips and a processing chip suitable
for calculating the direction and speed of said railroad car; and
an implementing device operatively connected to said processing chip of said
sensor, wherein said programmable processor of said implementing
device may engage a warning device if said railroad car has been
detected and when at least one of said processing chip of said sensor
and said programmable processor of said implementing device
discover an anomaly said detection system is placed into a fail-safe
state.
17. The self-testing train detection system of claim 16, wherein said
programmable processor of said implementing device is capable of having the
parameters of the information said programmable processor validates to be
adjusted.
18. The self-testing train detection system as claimed in claim 16, wherein
said processing chip of said sensor and said programmable processor of said
implementing device are in constant communication with each other.
19. The self-testing train detection system as claimed in claim 18, wherein
said wherein said train sensor and said implementing device are capable of
constant communication between each other via a wireless link.

20. The self-testing train detection system as claimed in claim 19, wherein said wireless link is capable of providing encrypted information suitable for providing secure information between said train sensor and said implementing device

21. The self-testing train detection system as claimed in claim 16, wherein said train sensor and said implementation device are suitable for independent operation and installation into existing systems

22. The self-testing train detection system as claimed in claim 16, wherein said sensor may be fitted within a single enclosure.

23. The self-testing train detection system as claimed in claim 16, wherein if said train sensor loses power then said train detection system is placed into a fail-safe state.

24. The self-testing train detection system as claimed in claim 23, wherein said implementation device engages said warning device when said train detection system has been placed in a fail-safe state.

25. The self-testing train detection system as claimed in claim 16, wherein said implementing device is capable of disengaging said warning device when said railroad car is moving away from a detection area.